APPENDIX B
HDDV Inspection/Maintenance Programs in Other States

APPENDIX B
PROGRAMS IN OTHER STATES

A number of states have initiated heavy-duty diesel I/M programs, of varying degrees of effectiveness. As of mid-1997, three states outside of California have operational inspection/maintenance programs for heavy-duty diesels that have been in existence for over 1 year: Arizona, Washington, and Colorado. Two other states, Utah and Nevada, have started new programs in the last year, while other states are initiating or conducting pilot programs. A summary of the programs, their test procedures, cutpoints and failure rates is provided below.

Arizona has the oldest operating program in the nation, and utilizes the "lug down" test for heavy duty diesel vehicles, which are defined as those vehicles whose GVW is over 26,000 lbs. The testing is conducted at centralized testing facilities, for vehicles registered in the Phoenix and Tucson metropolitan areas. Each HDDV is mounted on a twin-roll dynamometer, and the truck is accelerated to governed speed. Dynamometer load is then progressively increased until engine speed drops to 80 percent of governed speed, at wide open throttle. Smoke is measured using a light extinction type smokemeter, with the detection unit mounted on the exhaust stack. HDDVs with a continuous smoke opacity greater than 20 percent in Phoenix area (30 percent in the Tucson area) are considered to fail the test. The failure rate in Phoenix for 1996 was only 3.72 percent with approximately 7,200 vehicles tested.

Colorado has had a functioning program since 1990. The current law requires that all heavy-duty trucks greater than 7,500 lb empty weight (usually corresponding to a GVW of about 14,000 to 16,000 lb) be subjected to a smoke inspection using one of the following tests:

- **An on-road acceleration test**
- **A lug down test using the truck's brakes**
- **A loaded test at transmission stall speed for automatic transmission vehicles**
- **A lug down test using a dynamometer (similar to the procedure used in Arizona) with smoke measurements at full throttle and 100, 90, 80 and 70 percent of rated speed.**

Although high idle and snap acceleration tests are not required, the tests are often performed for informational purposes but have no bearing on the pass/fail determination. Tests are conducted under two parallel programs. The first is a self-certification program for fleets with 10 or more vehicles. The second is under a decentralized inspection/maintenance program for vehicles not in covered fleets. The decentralized program requires the use of the dynamometer based lug-down test. Both programs are applicable only to those vehicles registered in specific counties in Colorado. Colorado has cutpoint of 35 percent opacity continuous smoke for naturally aspirated HDDVs and 20 percent for turbocharged HDDVs. Typical failure rates have been in the 3 to 4 percent range for naturally aspirated vehicles, and about 1 percent for turbocharged vehicles.

Nevada initiated a program effective July 1, 1996, for heavy-duty diesel vehicles. The test used is the snap-acceleration test, with the SAE J1667 procedure. Vehicles are selected at random roadside locations for testing, and both in state and out-of-state vehicles are subject to inspection. The pass/fail cutpoint is 70 percent opacity, but no citations have been issued to date. The state has two roadside teams and plans to issue citations starting in the fall of 1997.

Utah has also initiated a program in 1996, but its actual operating status is unclear. The state uses the SAE J1667 procedure and has implemented a cutpoint of 70 percent smoke opacity for all heavy-duty vehicles, defined as vehicles whose GVWR is in excess of 16,000 lbs. However, it is not clear if the program is in its enforcement phase.

Washington State requires that all heavy-duty diesel vehicles registered in the Seattle-Tacoma, Spokane and Vancouver metropolitan areas be tested biennially, since 1993. The state uses the snap idle test, but it is not clear what the smoke measurement represents, as the smoke meters are not be built to SAE J1667 specifications. Washington State uses a 60 percent smoke opacity limit for 1974 to 1991 model year vehicles and a 40 percent opacity limit for 1992 and later vehicles. Anecdotal data on failures place the rates at around 15 percent, but this is an average rate for light- and heavy-duty diesel vehicles.

A number of other states are operating pilot programs. These states include Connecticut, Maryland, New Jersey, New York and British Columbia (Canada). In addition, all of the North-Eastern states have initiated or completed some testing programs to simply record opacity values on a sample of trucks. With

the exception of New York, these states are generally considering the SAE J1667 procedure for adoption. Illinois is also expected to institute a program but activities are currently on hold.